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ABSTRACT

In Fall 1998, the Maryland State Department of Education and six local school systems started a pilot program to evaluate the impact of serving breakfast to students in the classroom as part of the school day. Students in participating schools have an opportunity to eat breakfast in their classroom each day at no charge, regardless of family income. The program, called Maryland Meals for Achievement (MMFA), has expanded to include 11 test schools and 11 control schools for the 1999-2000 school year. Researchers from Massachusetts General Hospital and Harvard Medical School are evaluating the program's effectiveness in improving students' academic performance and other outcomes, such as attendance and behavior. Findings thus far include the following: (1) academic performance improves; (2) school attendance improves; (3) student attention improves; (4) behavior problems decrease; (5) students feel better; (6) more students eat breakfast every day; (7) eating in the classroom versus the cafeteria has unique benefits; (8) many students may be undernourished; (9) parents, students, and staff like the program; and (10) program costs are lower than expected. (Includes demographics, a menu description, and a summary of related research.) (EV)

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Classroom Breakfast. Helping Maryland Students Make the Grade.

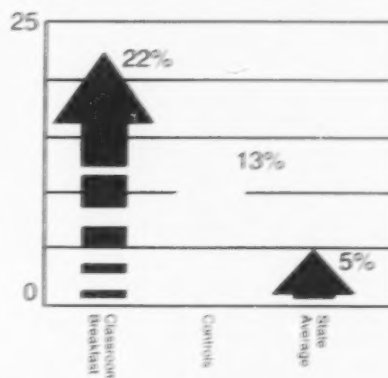
In fall 1998, the Maryland State Department of Education and six local school systems started a pilot program to evaluate the impact of serving breakfast to students in the classroom as part of the school day. Students in participating schools have an opportunity to eat breakfast in their classroom each day at no charge – regardless of family income. The program, called Maryland Meals for Achievement (MMFA), has expanded to include 11 test schools and 11 control schools for the 1999-2000 school year.

Researchers from Massachusetts General Hospital and Harvard Medical School are evaluating the program's effectiveness in improving students' academic performance and other outcomes, like attendance and behavior. Here's what they've learned so far.¹

Academic Performance Improves

➤ Maryland School Performance Assessment Program (MSPAP) test scores show greater gains in classroom breakfast schools compared to control schools or statewide averages. This statewide test, which measures school performance, assigns a score to each school based on the percentage of students who achieve satisfactory results. Over a two-year period, classroom breakfast schools showed a 22% improvement in that score, compared to a 13% improvement for control schools and a 5% improvement statewide.

Percent Improvement in
MSPAP "Satisfactory" Rating



➤ Student grades at the end of the first year of the classroom breakfast program were significantly correlated with both the rate of school breakfast participation and with the change in school breakfast participation. These findings suggest that students who eat breakfast at school most often have better grades and that the more these students increase their school breakfast participation, the higher their grades.

School Attendance Improves

➤ The school-wide average daily attendance rate in classroom breakfast schools improved more than a full percentage point (from 94.4% to 95.5%) from the year before the program started until the end of the program's first year. Over the same time period, attendance in control schools remained unchanged (95%). The increase in attendance in classroom breakfast schools amounts to an average of an additional two days in school per year.

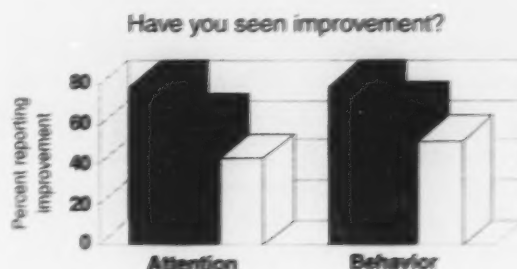
¹ All findings cited from J. M. Murphy, et al., *Effects of a Universally Free, In-Classroom School Breakfast Program: Results from the Maryland Meals for Achievement Evaluation, Year 2 Interim Report, March 2000, and Initial Report, May 4, 1999.*

Student Attention Improves

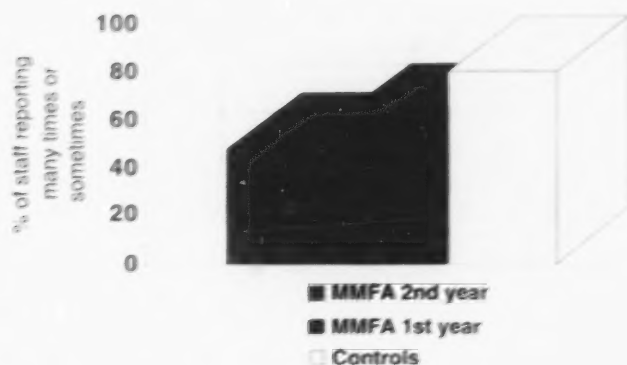
- School staff in classroom breakfast schools were almost twice as likely to rate student attention as having improved during the school year than were staff in control schools (83% versus 43%; according to a survey of 486 teachers and other staff in classroom breakfast and control schools).

Behavior Problems Decrease

- Staff surveys indicated a 40% larger improvement in behavior and attitude in classroom breakfast schools than in control schools.
- School-wide data provided by principals showed the average number of suspensions declined by one day per month in classroom breakfast schools following the start of MMFA. Suspensions in control schools declined by less than half a day during the same time period.
- Principals noted that, following the start of MMFA, disciplinary referrals to the office in classroom breakfast schools showed a 20% greater decrease than those in control schools.



How often this school year have you heard students complain of hunger?



Students Feel Better

- Student complaints of hunger decreased significantly in classroom breakfast schools but not in control schools.
- Following the start of MMFA, visits to the school nurse declined in classroom breakfast schools and increased in control schools.
- Complaints of tiredness, aches, and pains also decreased in classroom breakfast schools but not in control schools.

More Students Eat Breakfast Every Day

- Before MMFA, only about half of all students ate breakfast every day either at home or at school. After the classroom breakfast program started, that figure climbed to more than 90% in classroom breakfast schools, but remained unchanged in control schools.
- Participation in the School Breakfast Program tripled in classroom breakfast schools following the start of MMFA.

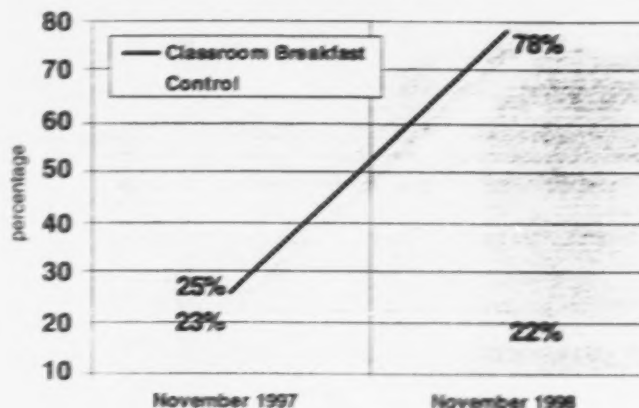
Eating in the Classroom is Important

It's easy to assume that more students will take advantage of school breakfast if they don't have to pay for it. However, research suggests that the classroom component has an even greater impact than cost on school breakfast participation.

- Related research in Baltimore City schools has shown only a modest 5% increase in the school breakfast participation rate for schools that offered breakfast at no charge *in the cafeteria*. The Baltimore City schools that offered breakfast at no charge *in the classroom* saw participation triple.

Why? Because classroom breakfast is more convenient than breakfast in the cafeteria. When they eat at their desks, students aren't forced to juggle book bags, coats and a cafeteria tray. They don't have to rush through their meal to get to homeroom. They don't have to make a special trip to the cafeteria to satisfy their hunger. Instead, they can sit quietly at their desks, interact with the teacher and fellow classmates, and prepare for the morning's lessons. As a result, teachers report that students are more settled in when it's time to begin their lessons. "Everyone looks forward to eating, and it's a relaxing way to start the day," reported one teacher in an MMFA survey.

Participation before and after start of classroom breakfast program



Good Nutrition is an Important and Necessary Investment

- Nutritional data gathered from interviews with students just before the start of the MMFA project indicate that as many as one-third of the students may be undernourished, since they report getting less than 1,500 calories per day in their diets.
- Compared to their better-nourished counterparts, Maryland students who get less to eat have lower grade point averages and higher rates of absences, tardiness, emotional, and behavioral problems.

Because the sample size was so small, these findings about nutrition failed to reach statistical significance. However, the same patterns were found in a similar but larger study conducted in Philadelphia during the same year. In the Philadelphia study, the relationships between inadequate nutrition, child hunger, academic problems, and breakfast skipping were statistically significant.

Parents, Students, Staff Like the Program

- When MMFA first started, many teachers were skeptical about a program they saw as extra work in the morning. But once they saw the benefits they became quite enthusiastic. In an MMFA survey, one teacher reported, "I like it. The children don't tell me they are hungry. They pay attention and get their work done."

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— teacher

"I don't see kids in the health room the first thing in the morning. I see kids eager to come to school."

— principal

Students like the program.

One told researchers that he liked the program because "When my stomach is full I am in a better mood." Another reported that, as a result of classroom breakfast, "I'm not hungry when doing my work."

Parents also like the classroom breakfast program. "My daughter is more enthused to eat at school," reported one parent. "I think she's ready to eat at a later time. My time in the morning is easier without fighting about eating breakfast at home."

Principals in classroom breakfast schools see the program as an investment that will pay off with improved student health and achievement. Catherine Allie, principal at South Lake Elementary in Montgomery County, Maryland, says the classroom breakfast program has had a tremendous impact in her school. "I don't see kids in the health room the first thing in the morning," she says. "I see kids eager to come to school. Five minutes after breakfast, I can walk around and find everyone focused and doing their work. Before (classroom breakfast), students just couldn't seem to get that jump start in the morning."

Surveys of more than 1,000 parents, students and staff in the first year of the program indicated that 92% of parents, 87% of students and 74% of staff said they like the program. Ninety percent of staff in classroom breakfast schools said they thought the program should continue.

How do you feel about your school's classroom breakfast program?



Program Costs Lower than Expected

Several factors influence the cost of offering "free" classroom breakfast. The number of students eligible for free and reduced-price meals is especially important because government subsidies for children in these categories are substantially higher than those for children who pay for their own meals.

Schools with a free and reduced-price population of about 50% can afford to offer breakfast to EVERY student for as low as 20 cents per student, per day.²

Schools with a free and reduced-price population of 75% or more may be able to offer the program to all students at virtually no additional cost.²

² Cost figures are based on actual and estimated costs of schools participating in MMFA. Figures include costs of food, supplies, and additional labor hours required to prepare and serve classroom breakfast. Start-up, administrative, and indirect costs are not included.

A Look at Demographics

Students from Baltimore, Harford, Howard, Montgomery, and Washington Counties are participating in the MMFA pilot project for the 1999-2000 school year. These students represent a mix of cultures and economic backgrounds. Some live in rural areas, while others live near cities. While many of the pilot schools have a fairly high percentage of students eligible for free and reduced-price meals, other pilot schools have a sizeable number of students who would traditionally pay for school breakfast. Each pilot school has a corresponding control school that is similar to the pilot in terms of socioeconomic makeup.

What's on the Menu

Each school serves meals that meet U.S. Dietary Guidelines for Americans. Menus vary from school to school, but generally include milk, juice, or fruit, and an entree such as a muffin, bagel, cereal, french toast sticks, or breakfast sandwich.

Related Research

Researchers continue to evaluate MMFA. Their findings will add to the growing body of evidence supporting the link between good nutrition and peak classroom performance.

In 1981, Dr. Ernesto Pollitt determined in laboratory settings that students who did not eat breakfast could not complete simple tests as effectively as those who had. (Pollitt, E., Leibel, R.L., and Greenfield, D., *Brief Fasting, Stress, and Cognition in Children*. The American Journal of Clinical Nutrition, vol. 34, pp 1526-1533)

In 1987, Meyers, Sampson, et. al. examined the effect of the School Breakfast Program on school performance of low-income elementary school children in Massachusetts. Students who participated in the School Breakfast Program had significantly higher standardized test scores in reading and math and were absent and tardy less often. (Meyers, A. F. et al., 1989. *School Breakfast and School Performance*. American Journal of Diseases of Children, 143:1234-1239)

A study done in Israel found that children who eat breakfast closer to class and test-taking time perform better on standardized tests than those who ate breakfast at home. (Vaisman, N. et al., 1996. *Effects of Breakfast Timing on the Cognitive Functions of Elementary School Students*, Archives of Pediatric and Adolescent Medicine)

A study conducted in Baltimore City found that schools offering classroom breakfast experienced dramatic increases in school breakfast participation, increased school attendance, and decreased tardiness. (The Abell Report, *Data From Abell Foundation Project Concludes: Changes in Student Breakfast Program will Increase Participation, Improve Performance*, February/March 1998, vol. 11, no. 1)

A three-year study of universal classroom breakfast in Minnesota resulted in an increase in participation from 12% to as high as 93%. Teachers reported increased student attention and fewer complaints about headaches and hunger. Administrators reported that school breakfast played a major role in the 40-50% decline in discipline issues. Researchers also noted a general increase in composite math and reading percentile scores. (Summary available from Minnesota Department of Children, Families and Learning, phone 612-297-2094)

At present, Minnesota and Massachusetts are conducting free breakfast program demonstration projects that reach nearly 500 schools in the two states. The U.S. government plans to begin its own demonstration project in fall 2000.



Maryland State Department of
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School Meals

Maryland's Child Nutrition Programs

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The Maryland Meals for Achievement planning team includes representatives from the Abell Foundation, the Center for Poverty Solutions, the Maryland State Department of Education, Baltimore City Public Schools, and school systems in Baltimore, Harford, Howard, Montgomery, Prince George's, Queen Anne's, Somerset, and Washington counties.

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